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09/732,701	12/11/2000	Eiji Kasutani	Q62251	2921

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EXAMINER

CHANG, JON CARLTON

ART UNIT PAPER NUMBER

2623

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/732,701

Applicant(s)

KASUTANI, EIJI

Examiner

Jon Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004 and 21 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-8,11,13-16,18-21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,5-8 and 11 is/are allowed.
- 6) ☒ Claim(s) 13-16,18-21 and 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/26/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 26, 2004 has been entered.

***Response to Applicant's Amendment and Arguments***

2. The amendment filed June 21, 2004, has been entered and made of record.

In response to the amendment, the objection to the claims due to informalities, presented in the last Office Action, is withdrawn.

Applicant's arguments have been fully considered, but are deemed to be moot in view of the new grounds of rejection.

The indicated allowability of claims 13-15, 18-20, 23-25 and 27 is withdrawn in view of the newly discovered reference(s) to Kasutani et al., "Image Retrieval System Using Compact Color Layout Descriptor." Rejections based on the newly cited reference(s) follow.

***Comment Regarding Information Disclosure Statement***

3. In the Information Disclosure Statement submitted May 26, 2004, the last three documents listed in the "NON PATENT LITERATURE DOCUMENTS" section have

been lined out, and therefore have not been considered. While Applicant has provided non-patent literature documents, there are discrepancies between those documents and the listed documents. In particular, the titles of the actual documents do not correspond to the titles of the listed documents. The Examiner is unable to ascertain whether the listed documents indeed refer to the actual documents provided.

### ***Claim Objections***

4. Claim 27 is objected to because of the following informalities:

Claim 27 is drawn to a storage medium storing a program. The claim recites that the program comprises a number of steps. These steps are not actual program steps. Rather, they are steps performed by a computer in response to a program. The Examiner suggests that the claim be amended accordingly.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13-16, 18-21 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,345,275 to Lee, and the document,

"Image Retrieval System Using Compact Color Layout Descriptor" by Kasutani et al. (hereinafter "Kasutani").

Regarding claim 13, Lee discloses an image retrieval device for retrieving an image being similar to an inquired image from images stored in an image database comprising:

a first coefficient transforming means for transforming a first group of image feature descriptors extracted from image data accumulated in said image database and then generating a second group of image feature descriptors to be used for calculating similarity (column 1, lines 61-65; column 2, lines 10-12; column 2, lines 19-20. The patent is only explicit with regard to transforming for the feature descriptors of the inquired image, while being silent with regard to transforming the feature descriptors for images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18. Presumably, the profiles for the image in the database are created in the same way, and therefore the description of the transforming means is applicable to images in the database.);

a second coefficient transforming means for transforming a first group of image feature descriptors extracted from image data of said inquired image and then generating a second group of image feature descriptors to be used for calculating similarity (column 1, lines 61-65; column 2, lines 10-12);

a similarity calculating means for calculating similarity by comparing said second group of image feature descriptors for each piece of image data generated by said first

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coefficient transforming means with said second group of image feature descriptors transformed by said second coefficient transforming means (column 2, lines 53-54);

an image size resizing means for resizing image data accumulated in said image database and/or inquired image (column 2, lines 9-11 and 34-39. Lee teaches two processes which are resizing: normalization and dividing into blocks for DCT processing, the latter being analogous to that described in Applicant's specification); and

an image feature descriptor producing means for performing an orthogonal transform on an image obtained by said image size resizing means and producing an orthogonal transform coefficient and using said orthogonal transform coefficient as a first group of image feature descriptors, wherein the image size resizing means comprises a block dividing means for partitioning the image data into blocks (column 2, lines 8-10; column 2, lines 35-39; the DCT is an orthogonal transform).

Lee does not disclose that the image size resizing means further comprises a dominant color calculating means for calculating a dominant color of each of blocks obtained by said block dividing means and an image creating means for creating an image using said dominant color of each of said blocks as a pixel. However, in an analogous environment, Kasutani discloses this as well as dividing the image into blocks (Note Applicant's concise explanation of the document, provided in the Information Disclosure Statement filed May 26, 2004, hereinafter referred to as the "concise explanation"; the dominant color is the average color of each block). Kasutani states that this technique maximizes retrieval accuracy (see abstract). Therefore, it would

have been obvious to one of ordinary skill in the art to modify Lee's invention according to the teachings of Kasutani.

Regarding claim 14, Kasutani further discloses that said image creating means extracts a color average of entire pixels contained in each of said blocks as said calculated dominant color of each of said blocks (see concise explanation).

Regarding claim 15, Kasutani discloses the image retrieval device according to Claim 13, wherein said block dividing means partitions said image into 64 blocks (note Fig.1,  $8 \times 8 = 64$ ; see also concise explanation).

Claim 16 is similar to claim 13, and therefore the discussion provided above for claim 13 is applicable to claim 16. The difference between the two claims, essentially, is that claim 16 recites performing a discrete cosine transform rather than an orthogonal transform. Lee discloses performing a discrete cosine transform (DCT, column 2, lines 38-29).

Claim 18 is similar to claim 13, but requires only a single coefficient transforming means. See the remarks provided above for claim 13 regarding common elements. Lee discloses a single coefficient transforming means (e.g., Fig.1, element 106), but does not disclose that that coefficient transforming means transforms the feature vectors for the images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18. Presumably, the profiles for the image in the database are created in the same way. It would have been obvious to one of ordinary skill in the art to utilize the coefficient

transforming means to perform the transforming of the coefficients of the images in the database, because this would keep system size and cost down. For the other features of claim 18, see the additional discussion for claim 13.

Regarding claims 19 and 20, see the discussion provided above for claims 14 and 15.

Claim 21 is similar to claim 16, but requires only a single coefficient transforming means. See the remarks provided above for claim 16 regarding common elements. Lee discloses a single coefficient transforming means (e.g., Fig.1, element 106), but does not disclose that that coefficient transforming means transforms the feature vectors for the images in the database. However, the patent does mention that profiles of images in the database are used, column 2, lines 19-20, and explains how profiles are created for the inquired image via the transforming, column 2, lines 15-18.

Presumably, the profiles for the image in the database are created in the same way. It would have been obvious to one of ordinary skill in the art to utilize the coefficient transforming means to perform the transforming of the coefficients of the images in the database, because this would keep system size and cost down. For the other features of claim 21, see the additional discussion for claim 13.

Regarding claims 23-25, remarks analogous to those provided above for claims 13-15 are applicable.

Regarding claim 26, remarks analogous to those provided above for claim 16 are applicable.



Claim 27 is drawn to a storage medium storing a program, which is similar to claim 13. The discussion provided above for claim 13 is applicable to claim 27. Lee is silent with regard to a storage medium storing a program. However, Lee's system is utilized in a computer (see abstract, and column 1, lines 23-25). The Examiner takes Official Notice that it is well known to utilize storage media storing programs in computers. It would have been obvious to one of ordinary skill in the art to provide a storage medium storing a program for implementing Lee's method, as modified by Kasutani, because this would allow the method to function on the computer.

***Allowable Subject Matter***

7. Claims 2, 3, 5-8 and 11 are allowed.

***References Cited***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,665,442 to Sekiguchi et al. discloses an image retrieval system and method which utilizes characteristic descriptors.


U.S. Patent 6,681,061 to Agata et al. discloses a method and apparatus for image retrieval which utilizes a reduction/expansion controller.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (703)305-8439. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jon Chang  
Primary Examiner  
Art Unit 2623

Jon Chang  
November 1, 2004